

PRELIMINARY AMENDMENT

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Applicants: Maurice Eduardus Theodorus van Esbroeck, et al.

Title: *Moulding*; Filed: Herewith on March 23, 2004

Divisional Application of U.S. Serial No. 09/863,933

Amendments to the Claims

1. Cancelled.
2. Cancelled.
3. Cancelled.
4. Cancelled.
5. Cancelled.
6. (Original) A molding device for molding three-dimensional products from a mass of foodstuff which is suitable for human consumption, comprising:
 - a. a drum having a direction of rotation and comprising a drum wall having at least one mold cavity extending through the drum wall;
 - b. a mass-feed component adjacent the drum for feeding and pressing the mass into the at least one mold cavity; and
 - c. separating means for removing any mass projecting from the at least one mold cavity of the drum.
7. (Original) The molding device of claim 6, wherein the at least one mold cavity comprises a first and a second mold cavity and wherein the separation means are arranged on the drum and wherein separate separation means are associated with the first and the second mold cavity.

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8. (Original) The molding device of claim 6, wherein the separation means are fixed at a separation position along the drum.

9. (Original) The molding device of claim 6, wherein the drum comprises a first surface and a second surface and the mold cavity comprises a first opening positioned along the first surface of the drum and a second opening positioned along the second surface of the drum and wherein the mass-feed component comprises at least one compartment having a feed opening adjacent the first opening of the mold cavity to feed mass into the mold cavity, wherein the molding device further comprises a closure component for at least temporarily closing the second opening of the mold cavity.

10. (Original) A molding device for molding three-dimensional products from a mass of foodstuff which is suitable for human consumption, comprising:

a. a drum having a first surface, a second surface, and a direction of rotation and comprising a drum wall having at least one passage extending through the drum wall, wherein the at least one passage has a first opening positioned along the first surface of the drum and a second opening positioned along the second surface of the drum;

b. at least one molding component positioned on the first surface of the drum and positioned over the first opening of the passage, wherein the molding component comprises a slideable mold; and

c. a mass-feed component positioned adjacent the second opening of the at least one passage to feed mass through the passage and into the slideable mold.

11. (Original) A molding device for molding three-dimensional products from a mass of foodstuff which is suitable for human consumption, comprising:

a. a drum having a first surface, a second surface, and moving along a path and comprising at least one mold cavity defined by mold walls and having a cavity opening positioned along the first surface of the drum; and

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b. a mass-feed component positioned adjacent the drum for feeding mass into the at least one mold cavity.

12. (Original) The molding device of claim 11, further comprising a belt positioned adjacent the drum, wherein the belt bears against at least a portion of the first surface of the drum to at least temporarily close the at least one mold cavity.

13. (Original) The molding device of claim 12, further comprising a film-feed means for feeding a film between the belt and the first surface of the drum.

14. (Original) The molding device of claim 12, further comprising belt pressure means to exert pressure directed substantially toward the drum on at least a portion of the belt that bears against at least a portion of the first surface of the drum.

15. (Original) The molding device of claim 11, further comprising:

c. film-feed means positioned adjacent the drum for placing a film to at least partially cover the at least one mold cavity before mass is fed into the cavity;

d. vacuum means for removing air from the mold cavity at least partially covered by the film so that the film comes to lie against the walls of the mold cavity; and

e. ejector means for removing the mass from the at least one mold cavity.

16. (Original) The molding device of claim 15, further comprising aeration means for feeding air into the at least one mold cavity.

17. (Original) The molding device of claim 15, further comprising a connecting passage connecting the at least one mold cavity and the second surface of the drum.

18. (Original) The molding device of claim 11, further comprising:

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c. first film-feed means for placing a film to at least partially cover the walls of the at least one mold cavity before mass is fed into the cavity; and

d. second film-feed means for placing a second film over the mass which is fed into the at least one mold cavity.

19. (Original) The molding device of claim 18, further comprising a film-welding device for welding the first and second films together.

20. (Original) The molding device of claim 11, further comprising a belt positioned around substantially the entirety of the first surface of the drum.

21. (Original) The molding device of claim 11, further comprising:

c. first film-feed means for placing a film to at least partially cover the walls of the at least one mold cavity before mass is fed into the cavity;

d. closure means for at least temporarily closing the cavity opening;

e. a connecting passage connecting the at least one mold cavity and the second surface of the drum; and

f. pressure medium feed means for feeding a gaseous or liquid pressure medium into the connecting passage to generate a fixing pressure in the mass enclosed in the mold cavity by the closure means.

22. (Original) The molding device of claim 11, further comprising:

c. closure means for at least temporarily closing the cavity opening,

wherein the mold cavity is further defined by an adjustable base and has a cavity volume that varies depending on the position of the base, wherein the mold cavity has:

i. a first volume when the base is positioned in a first position before mass is fed into the cavity;

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- ii. a second volume when the base is positioned in a second position after mass has been fed into the cavity but before the cavity opening has been closed; and
 - iii. a third volume when the base is positioned in a third position after the cavity opening has been closed by the closure means,
- wherein the second volume is greater than the first volume and the third volume.

23. (Original) A molding device for molding three-dimensional products from a mass of foodstuff which is suitable for human consumption, comprising:

- a. a mold comprising a mold cavity, wherein the mold cavity is at least partially lined with a substantially flexible membrane; and
- b. feed means for feeding a pressure medium between the mold and the membrane at a feed position.

24. (Original) The molding device of claim 23, wherein the flexibility of the membrane is variable and wherein a part of the membrane which lies in the vicinity of the feed position is less flexible than the remainder of the membrane.

25. (Original) A molding device according to claim 23, wherein positioning means are provided for positioning a rigid, preferably edible, body on the flexible membrane in the vicinity of the feed position.

26. (Original) A molding device for molding three-dimensional products from a mass of foodstuff which is suitable for human consumption, comprising:

- a. a mold comprising a mold cavity defined by side walls and a base and having a cavity opening, wherein the base comprises a piston; and
- b. pressure medium feed means having outlet nozzles arranged in the base of the mold cavity for supplying pressure to the base to move the piston.

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27. (Original) The molding device of claim 11, further comprising:

c. a pump device coupled to the mass-feed component for supplying the mass to the mass-feed component.

28. (Original) The molding device of claim 27, further comprising

d. additive feed means for feeding additives under pressure to the pump device.

29. (Original) The molding device of claim 27, further comprising

d. closure means for at least temporarily closing the cavity opening;

30. (Original) The molding device of claim 27, wherein a plurality of pump devices are coupled to the mass-feed component for supplying different types of masses to the mass-feed component.

31. (Original) A molding device for molding three-dimensional products from a mass of foodstuff which is suitable for human consumption, comprising:

a. a mold moving along a path and comprising at least one mold cavity defined by walls and a base, wherein the mold cavity has a cavity volume;

b. a first mass-feed component positioned along the path for feeding a first mass into the at least one mold cavity; and

c. a second mass-feed component positioned along the path downstream of the first mass-feed component for feeding a second mass into the at least one mold cavity.

32. (Original) The molding device of claim 31, wherein the position of the base of the at least one mold cavity is adjustable by the device to vary the volume of the mold cavity, wherein the device moves the base into:

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i. a first position when the mold cavity is located along the path at the position of the first mass-feed component, wherein the mold cavity has a first volume when the base is in the first position; and

ii. a second position when the mold cavity is located along the path at the position of the second mass-feed component, wherein the mold cavity has a second volume that is greater than the first volume when the base is in the second position.

33. (Original) The molding device of claim 31, further comprising:

d. a hollow-forming component positioned along the path between the first mass-feed component and the second mass-feed component, wherein the hollow-forming component forms a hollow in the mass which has been fed into the mold cavity by the first mass-feed component; and

e. a filling-introducing component positioned along the path between the hollow-forming component and the second mass-feed component for introducing a filling into the hollow.

34. (Original) A molding device for molding three-dimensional products from a mass of foodstuff which is suitable for human consumption, comprising:

a. a stationary central tube for receiving a mass of foodstuff and having a tube opening through which the mass exits the tube;

b. a rotating ring positioned around the tube;

c. at least one chamber formed between the tube and the ring and having an outlet passage through which the mass exits the chamber;

d. closure means for closing the outlet passage; and

e. separating means for separating at least a portion of the mass exiting the outlet passage.

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35. (Original) The molding device of claim 34, wherein the closure means and the separating means are positioned on the ring.

36. (Original) The molding device of claim 35, wherein the closure means comprises a stationary outer casing positioned around the ring, wherein the outer casing comprises a casing opening.

37. (Original) The molding device of claim 36, wherein the mass exits the chamber when the casing opening is at least partially aligned with the outlet passage.

38. (New). A molding device for molding three-dimensional products from a mass of foodstuff which is suitable for human consumption comprising:

- a. at least one mold cavity having at least one opening;
- b. at least one mass-feed component for at least partially filling the at least one mold cavity with a portion of a mass of foodstuff via the at least one opening for a filling period;
- c. closure means for at least temporarily closing the at least one cavity opening to retain the mass in the closed mold cavity for a fixing period,
wherein the device is capable of exerting on the mass a filling pressure during at least part of the filling period and a fixing pressure during at least part of the fixing period, wherein the fixing pressure is capable of being varied during at least part of the fixing period.

39. (New) A molding device for molding three-dimensional products from a mass of foodstuff which is suitable for human consumption comprising:

- a. at least one mold cavity having at least one opening;
- b. at least one mass-feed component for filling the at least one mold cavity with a portion of a mass of foodstuff via the at least one opening; and

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c. closure means for at least temporarily closing the at least one cavity opening,

wherein the at least one mold cavity further comprises an adjustable base and has a cavity volume that varies depending on the position of the base, wherein the at least one mold cavity has:

i. a first volume when the base is positioned in a first position before mass is fed into the cavity;

ii. a second volume when the base is positioned in a second position after mass has been fed into the cavity but before the cavity opening has been closed; and

iii. a third volume when the base is positioned in a third position after the cavity opening has been closed,

wherein the second volume is greater than the first volume and the third volume.